

CLAIMS:

1. A coating powder, comprising:
a polyester resin composition comprising:
an amorphous carboxylic acid functional polyester resin in an amount of 75 to 90 parts per hundred parts by weight of the total polyester resin composition, and
a semi-crystalline polyester resin in an amount of 10 to 25 parts per hundred parts by weight of the total polyester resin composition, wherein the semi-crystalline polyester resin provides the coating powder with a total cure time of 5 to 20 minutes;
an epoxy-functional curing agent; and
a catalyst.
2. The coating powder of claim 1, wherein the amorphous resin is non-blooming.
3. The coating powder of claim 1, wherein the semicrystalline resin is formed from a polyol and a polycarboxylic acid wherein the polycarboxylic acid comprises 10 to 50 phr of an asymmetrically substituted aromatic polyacid, ester, acid halide, anhydride, or a mixture thereof.
4. The coating powder of claim 1, wherein the epoxy-functional curing agent is TGIC.

5. The coating powder of Claim 1, wherein the catalyst is a tetra-substituted ammonium halide salt, a tetra-substituted phosphonium halide salt a tetra-substituted phosphonium tetra-substituted borate salt, a tetra-substituted arsonium tetra-substituted borate salt, a tetra-substituted ammonium tetra-substituted borate salt, an imidazole tetra-substituted borate salt, or a mixture comprising at least one of the foregoing salts.

6. A coating powder, comprising:

a polyester resin composition comprising:

an amorphous carboxylic acid functional polyester resin in an amount of 75 to 90 parts per hundred parts by weight of the total polyester resin composition, and

a semi-crystalline polyester resin in an amount of 10 to 25 parts per hundred parts by weight of the total polyester resin composition, wherein the semicrystalline resin is formed from a polyol and a polycarboxylic acid, wherein the polycarboxylic acid comprises 10 to 50 phr of an asymmetrically substituted aromatic polyacid or derivative thereof;

triglycidyl isocyanurate; and

tetraethyl phosphonium tetrafluoroborate in an amount of 0.1 to 5 parts per hundred parts of total resin by weight.

7. A method for coating an article, comprising:

contacting the article with a particulate coating powder to form a powder coating layer, wherein the particulate coating powder comprises a polyester resin comprising an amorphous carboxylic acid functional polyester resin in an amount of 75 to 90 parts per hundred parts by weight of the total polyester resin composition, and a semi-crystalline polyester resin in an amount of 10 to 25 parts per hundred parts by weight of the total polyester resin composition, wherein the semi-crystalline polyester resin provides the coating powder with a total cure time of 5 to 20 minutes, an epoxy-functional compound, and a catalyst;

fusing the coating powder layer to form a powder coating; and

curing the powder coating at a temperature and for a time effective to form a smooth coating.

8. The method of Claim 7, wherein fusing and curing is at a temperature of 200 to 350°F.

9. The method of Claim 7, wherein contacting is by electrostatic spraying, corona-discharge, tribocharging, fluidized bed, or a combination thereof.

10. The method of Claim 7, wherein the article comprises a substrate selected from the group consisting of wood, hardwood, hard board, laminated bamboo, wood composites, particle board, electrically conductive particle board, high density fiber board, medium density fiber board, low density fiber board, masonite board, laminated bamboo, acrylonitrile butadiene styrene copolymers, polyphenylene oxide copolymers, sheet molded components, polyolefins, polycarbonates, acrylics, nylons paper, cardboard, metal, glass, steel, ceramic, carbon, graphite and combinations thereof.

11. A powder coated article manufactured according to the method of Claim 7.